CLAIMS

We claim:

1. A spindle motor comprising:

a rotatable component defining a bearing gap with a stationary component;

a magnet affixed to the rotatable component;

a stator, affixed to the stationary component, for generating an electromagnetic force that interacts with the magnet for driving the rotatable component; and

a base plate affixed to the stationary component, wherein the base plate defines a minimal axial gap with the magnet, the base plate comprising a first material positioned adjacent to the magnet, and a second material having a predefined stiffness, the second material positioned at a greater radial distance from the magnet than the radial distance between the stator and the magnet.

2. The spindle motor as in claim 1, wherein the minimal axial gap is in the range of 0.06 mm to 0.1 mm.

3. The spindle motor as in claim 1, wherein the first material is a nonmagnetic material and the run current is about 40mA.

4. The spindle motor as in claim 1, wherein the minimum radial distance from the magnet to the second material is at least five times greater than the minimum radial distance from the magnet to the stator.

5. The spindle motor as in claim 1, wherein the first material is comprised of one of aluminum, copper magnesium and titanium, and the second material is comprised of steel.

6. The spindle motor as in claim 1, wherein the first material and the second material are fixed together by one of a straight interface, a stepped interface, a sloped interface, and a combination of the stepped interface and the sloped interface.

7. The spindle motor as in claim 1, wherein the second material has a Young's modulus equal to or greater than steel.

8. The spindle motor as in claim 1, wherein the stationary component comprises a shaft and the rotatable component comprises a sleeve and a hub.

9. A spindle motor for incorporation into a disc drive storage system comprising:

a rotatable component defining a bearing gap with a stationary component;

a storage disc attached to one of the stationary component and the rotatable component;

a magnet affixed to the rotatable component;

a stator, affixed to the stationary component, for generating an electromagnetic force that interacts with the magnet for driving the rotatable component; and

a base plate affixed to the stationary component, wherein the base plate defines a minimal axial gap with the magnet, the base plate comprising a first material positioned adjacent to the magnet, and a second material having a predefined stiffness, the second material positioned at a greater radial distance from the magnet than the radial distance between the stator and the magnet.

10. The spindle motor as in claim 9, wherein the minimal axial gap is in the range of 0.06 mm to 0.1 mm.

11. The spindle motor as in claim 9, wherein the first material is a nonmagnetic material and the run current is about 40mA.

12. The spindle motor as in claim 9, wherein the minimum radial distance from the magnet to the second material is at least five times greater than the minimum radial distance from the magnet to the stator.

13. The spindle motor as in claim 9, wherein the first material is comprised of one of aluminum, copper magnesium and titanium, and the second material is comprised of steel.

14. The spindle motor as in claim 9, wherein the first material and the second material are fixed together by one of a straight interface, a stepped interface, a sloped interface, and a combination of the stepped interface and the sloped interface.

15. The spindle motor as in claim 9, wherein the second material has a Young's modulus equal to or greater than steel.

16. The spindle motor as in claim 9, wherein the stationary component comprises a shaft and the rotatable component comprises a sleeve and a hub.

17. A method comprising:

defining a bearing gap between a rotatable component and a stationary component;

affixing a magnet to the rotatable component;

affixing a stator to the stationary component, for generating an electromagnetic force that interacts with the magnet for driving the rotatable component; and

affixing a base plate to the stationary component, wherein the base plate defines a minimal axial gap with the magnet, the base plate comprising a first material positioned adjacent to the magnet, and a second material having a predefined stiffness, the second material positioned at a greater radial distance from the magnet than the radial distance between the stator and the magnet.

18. The method as in claim 17, further comprising forming the minimal axial gap in the range of 0.06 mm to 0.1 mm.

19. The method as in claim 17, further comprising forming the first material of one of aluminum, copper magnesium and titanium, and forming the second material of steel, wherein the first material and the second material are fixed together by one of a straight interface, a stepped interface, a sloped interface, and a combination of the stepped interface and the sloped interface..

20. The method as in claim 17, further comprising forming a radial distance from the magnet to the second material at least five times greater than a radial distance from the magnet to the stator.